### Citizen Science Project Stink-be-Gone "2" with Maryland Master Gardeners

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## Project Leaders





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### Madeline Potter

-Entomology graduate student -Received a B.Sc. in Environmental Horticulture

-Researching the biology and ecology of Anastatus reduvii, a native parasitic wasp to control the brown marmorated stink bug (BMSB, Halyomorpha halys)

#### Dr. Paula Shrewsbury

-Runs an entomology research and extension lab Research focus is on the biological control of invasive species such as BMSB and emerald as horer; and creating urban habitals that support natural enemies and pollinators to prevent pest outbreaks

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### Outline

- Introduction to:
  - Stink bugs
  - Biological control
  - Citizen Science
- Brief project overview



## What are Stink Bugs?

#### Order: Hemiptera Family: Pentatomidae

- Called *stink* bugs because they produce an odor when spooked or threatened
- Approximately ¾ inch long
- Piercing-sucking mouthparts

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## Good vs. Bad Stink Bugs

Predator/Beneficial





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### Brown Marmorated Stink Bug (BMSB)

### Halyomorpha halys

- Invasive pest from North East Asia
- First detected in U.S. in PA in the mid-1990's
- Now in 46 States
- In 2010, \$37 million were lost to BMSB apple damage alone







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## **Controlling Bad Stink Bugs**

1. Hand removal or vacuuming

#### 2. Insecticides

3. Biological control- NATURAL ENEMIES >Predators and parasitic wasps



### What are Parasitic Wasps?

- Lay baby wasps inside BMSB eggs
- Specialists or generalists
- Support parasitic wasps by conserving:
  Shelter
  - Food
  - Reproduction- host insect eggs

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### **BMSB Parasitic Wasp Life Cycle**



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Anastatus reduv

## Project Stink-be-Gone "2"

What types of insect eggs do BMSB parasitic wasps use to <u>reproduce</u>?

1. Collect any and all insect eggs

- 2. Place insect eggs in growth chambers
- 3. Identify eggs and what emerges

### **Citizen Science- Master Gardeners**

### **Citizen Science:**

• Recruit volunteers to participate in experiments: Data collection

#### Master Gardeners:

- · Search landscapes/parks/gardens for insect eggs
- Collect insect eggs and record data
- Ship insect eggs to Shrewsbury lab

# **Project Timeline**

		Part
February	Volunteer recruitment	
Late February/Early March	1.5 hours of virtual training & receive project supplies in mail	
March - August	Insect egg mass collection (1 hour/week)	

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# **Volunteer Benefits**

#### Fulfill continuing education hours and/or volunteer service hours

· Gain knowledge in:

- Galli Antowieuge m. Insect pests Biological control Parasitic wasps Insect egg I.D. Data collection Sustainable pest management
- Join a virtual project community
- An excuse to explore your landscape
- Discover cool bugs and eggs!







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